

IN THE SPECIFICATION:

Please replace the paragraph beginning at Page 1, line 4 with the following:

FIELD OF THE INVENTION

The present invention relates to the field of power plant technology. It concerns a cooling-air cooler for a gas-turbine plant of a power plant ~~according to the preamble of claim 1.~~ The invention also relates to the use of such a cooling-air cooler.

At page 1, line 9, kindly insert the heading:

BACKGROUND OF THE INVENTION

At page 2, line 30, kindly insert the heading:

SUMMARY OF THE INVENTION

Kindly replace the paragraph beginning at page 3, line 4 with the following:

~~The object is achieved by all the features of claim 1 together.~~ The essence of the invention is to separate excess water not evaporated by the cooling air by a water separator arranged on the air side. In this way, with the same time improved cooling, a greater quantity of water can be sprayed in without damage occurring in the parts of the gas-turbine plant which are to be cooled. In this way, a protective function is build into the plant.

Kindly replace the paragraph beginning at page 5, line 14 with the following:

BRIEF DESCRIPTION OF THE DRAWING

The invention is to be explained in more detail below with reference to exemplary embodiments in connection with the drawing drawings, in which:

fig. 1 shows a simplified longitudinal section through a cooling-air cooler in a first exemplary embodiment of the invention with spirally wound steam-generation tubes;

fig. 2 shows, in a representation comparable with fig. 1, a cooling-air cooler in a second exemplary embodiment of the invention with parallel finned tubes as steam-generation tubes;

fig. 2a shows a cross-section through an individual finned tube;

fig. 3 shows, a representation comparable with fig. 1, a cooling-air cooler in a third exemplary embodiment with a subdivided steam-generation part with parallel finned tubes as steam-generation tubes in one section and spirally wound steam-generation tubes in the other section;

fig. 3a shows a cross-section through an individual finned tube;

fig. 4 shows a first exemplary embodiment for the use according to the invention of the cooling-air cooler as provided by the invention in a gas-turbine plant working in the open gas cycle, the cooling being effected solely by spraying in water;

fig. 5 shows a second exemplary embodiment for the use according to the invention of the cooling-air cooler as provided by the invention in a gas-turbine plant working in the open gas cycle, the cooling being effected by spraying in water and/or by generating steam, and the steam being injected into the gas-turbine plant between compressor and turbine;

fig. 6 shows a third exemplary embodiment for the use according to the invention of the cooling-air cooler as provided by the invention in a gas-turbine plant working in the open gas cycle, the cooling being effected by spraying in water and/or by generating steam, and the steam being injected into the cooling air;

fig. 7 shows an exemplary embodiment for the use according to the invention of the cooling-air cooler as provided by the invention in a combined-cycle power plant, the cooling being optionally effected by spraying in water and/or by generating steam, and the steam being used in the water/steam circuit.

At page 6, line 32, kindly insert the heading:

DETAILED DESCRIPTION OF THE INVENTION

Kindly replace the paragraph beginning at Page7, Line 28:

A water separator 19, through which the cooling air flows, is arranged below the spiral tubes 17 upstream of the cooling-air outlet 20. The task of the water separator 19 is to separate water which has been sprayed through the injection nozzles 14 and has not been evaporated by the cooling-air flow and to deliver this water separately to the outside via a device (not shown in fig. 1). The cooled cooling-air flow, which leaves the cooling-air cooler 10 through the cooling-air outlet 20, is then virtually free of moisture, which would constitute a risk during the subsequent use of the cooling air in the gas-turbine plant. The water separator 19 normally functions according to the inertia principle, i.e. the cooling-air flow is deflected in a suitable manner in such a way that the inert "water drops" are unable to follow the deflection and strike a wall and are deposited there. The water separator 19 preferably consists of many individual sub-units which work in parallel and are combined to form a stack. A suitable water separator, which consists of a multiplicity of parallel, spirally wound passages, is commercially obtainable, for example, under the designation "ZYKLOTOP" from the German company Richard Tscherwitschke GmbH, Leinfelden-Echterdingen. The water separator 19 enables more water to be sprayed in than can actually be evaporated by the cooling-air flow. As a result, the setting of the sprayed water quantity per unit of time in the varying operating states is substantially simplified. The arrangement of the water separator 19 directly upstream of the cooling-air inlet outlet 20 provides, for the cooling-air flow, a maximum flow path for the evaporation of the sprayed water. However, it is also conceivable to arrange the water separator 19 at another point of the cooling-air cooler 10.

Kindly replace the paragraph beginning at Page 9, Line 4:

A form of the cooling-air cooler differing from the cooling-air cooler 10 from fig. 1 is reproduced in fig. 2. The cooling-air cooler 22 in fig. 2, with regard to pressure vessel 11, cooling-air inlet and outlet 12 and 20 respectively, the water-spraying device 13, 14, 15 and the water separator 19, is certainly largely identical to the cooling-air cooler 10 from fig. 1. A different feature, however, is the design of the steam-generation section. Here, instead of spiral tubes, bundles of finned tubes 23 are provided, which extend parallel to one another and to the axis 53 and are connected via corresponding concentric bundles of ring lines 24, 25 to the feedwater inlet 18 and saturated-steam outlet 16, respectively. The cross section through an individual finned tube 23 is shown in fig. 2a and clearly shows that the individual finned tube 23 is ~~reproduced in an enlarged representation to the left of the cooling-air cooler 22 shown in fig. 2a~~ and clearly shows that the individual finned tube 23 in each case consists of a central tube 26, to the outside of which a plurality of axially running fins 27 are attached for enlarging the heat-transfer area with a simultaneously low pressure drop. The feedwater and the saturated steam, respectively, flow through the finned tubes 23 from bottom to top in counterflow to the cooling air.

Kindly delete pages 13 and 14 in their entirety.

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Application No. 09/758,187
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IN THE DRAWINGS:

Kindly correct the drawings as submitted in the Request for Approval of Drawing

Changes submitted concurrently herewith on a separate sheet.